CONTENTS OF VOLUME 51

NUMBER 1

The classification of nontherian mammals ..... *James A. Hopson* 1

Observations on reproduction in *Leggadina* (Rodentia, Muridae) ..... *J. Mary Taylor* and *B. Elizabeth Horner* 10

Activity patterns of bats over a desert spring ..... *Michael J. O'Farrell* and *W. Glen Bradley* 18

Determination of hair density in the mink ..... *Sylwester Kaszowski, Charles C. Rust,* and *Richard M. Shackelford* 27

Superficial facial musculature of *Aplodontia* ..... *David Klingener* 35

Locomotion in some East African viverrids ..... *M. E. Taylor* 42

Lability of tail length of the white-footed mouse, *Peromyscus leucopus noveboracensis* ..... *Richard W. Thorington, Jr.* 52

Variation in the mountain goat, *Oreamnos americanus* (Blainville) ..... *Ian McT. Cowan* and *Wayne McCrory* 60

Composition of milk from spotted and spinner porpoises ..... *Michael E. Q. Pilson* and *David W. Waller* 74

Agonistic interactions in the red kangaroo (*Megaleia rufa*) ..... *Eleanor M. Russell* 80

Molt in free-ranging rhesus monkeys, *Macaca mulatta* ..... *Stephen H. Vessey* and *John A. Morrison* 89

An ecological study of *Neotoma floridana* in Oklahoma ..... *John W. Goertz* 94

The large fruit bats (genus *Artibeus*) of Middle America, with a review of the *Artibeus jamaicensis* complex ..... *William B. Davis* 105

Observations on the behavior of *Dasycercus cristicauda* and *Dasyuroides byrnei* in captivity ..... *M. W. Sorenson* 123

Stanley Paul Young, 1889–1969 ..... *Richard H. Manville* 131

General Notes

The transparent dactylopatagium minus in phyllostomatid bats ..... *Terry A. Vaughan* 142

The function of the tail as a fat storage depot in the beaver (*Castor canadensis*) ..... *Michael Aleksiuk* 145

First insular record of *Notiosorex crawfordi*, with notes on other mammals of San Martin Island, Baja California, Mexico ..... *Terry A. Schulz, Frank J. Radovsky,* and *Paul D. Budwiser* 148

The status of *Myotis occultus* ..... *Roger W. Barbour* and *Wayne H. Davis* 150

Weight and blindness of harbor seals ..... *Terrell C. Newby, Frederick M. Hart,* and *Robert A. Arnold* 152

Postnatal growth and development of *Peromyscus maniculatus nubiterrae* ..... *Alicia V. Linzey* 152

Litter size of the star-nosed mole (*Condylura cristata*) ..... *David E. Davis* and *Frank Peek* 156

Notes on the pelage and priming sequence of arctic foxes in northern Alaska ..... *David L. Chesemore* 156

Warm-season changes in fat content of *Eptesicus fuscus* ..... *Neil S. Weber* and *James S. Findley* 160

Notes on the mammals of southern Nepal ..... *David L. Chesemore* 162

Chromosomes of *Sylvilagus floridanus* and *S. transitionalis* ..... *Henry E. Holden* and *H. Stephan Eabry* 166

Myonycteris torquata and *Megaloglossus woermanni* from Uganda ..... *Russell E. Mumford* 169

Effect of supplementary food on breeding in woodland rodents ..... *C. H. S. Watts* 169

Observations of the helminth parasites in beavers ..... *Fred J. Brenner* 171

Contents of the stomach of an elephant seal ..... *G. Victor Morejohn* and *Donald M. Baltz* 173

Food habits and breeding cycle of the Malaysian fruit-eating bat, *Cynopterus brachyotis* ..... *Lim Boo Liat* 174

Interment behavior in the yellow-bellied marmot (*Marmota flaviventris*) ..... *Kenneth B. Armitage* and *Jerry F. Downhower* 177

Notes on the behavior of the pygmy armadillo ..... *Jon P. Rood* 179

Bait preference of small mammals ..... *Earl F. Patric* 179

Homing in blinded bats (*Myotis sodalis*) ..... *Wayne H. Davis* and *Roger W. Barbour* 182

Correlation with fur density of color polymorphism in *Sciurus vulgaris* ..... *Paavo Voipio* and *Raimo Hissa* 185

Growth layers in a dugong tooth ..... *V. B. Scheffer* 187

Occurrence of the Mexican big-eared bat in Utah ..... *Hal L. Black* 190

A second locality for *Eudiscopus denticulus* (Chiroptera, Vespertilionidae) ..... *Karl F. Koopman* 191

Seed preferences in wild caught *Peromyscus maniculatus bairdii* and *Peromyscus leucopus noveboracensis* ..... *Lee C. Drickamer* 191

Correction for bias in movements of small animals as revealed by trapping ..... *C. H. S. Watts* 194

Seasonal change in food preference of *Onychomys leucogaster breviauritus* ..... *J. Curtis Jahoda* 197

Observations on the natural history of *Diplomys darlingi* ..... *Robert B. Tesh* 197

Notes on the reproduction, growth, and development of echimyid rodents in Panamá ..... *Robert B. Tesh* 199

A raccoon moves her young ..... *G. G. Montgomery, J. W. Lang,* and *M. E. Sunquist* 202

Longevity records for *Artibeus jamaicensis* and *Myotis nigricans* ..... *Don E. Wilson* and *Edwin L. Tyson* 203

Elephant seal in the Weddell Sea *David R. Cline, Albert W. Erickson,* and *Robert H. Hofman* 204

An unusual roost of *Artibeus cinereus watsoni* ..... *Don E. Wilson* 204

Feae's viper and the common gray shrew: a distribution note on predator and prey ..... *Hymen Marx* and *Thomas S. Olechowski* 205

Reviews 206

Comments and News 210

NUMBER 2

Functional morphology of the forelimb of mormoopid bats ..... *Terry A. Vaughan* and *Gary C. Bateman* 217

Reproduction and growth for two species of grasshopper mice (*Onychomys*) in the laboratory ..... *Aelita J. Pinter* 236

Tomopeas ravus Miller (Chiroptera) ..... *William B. Davis* 244

Distribution patterns of black-tailed deer (*Odocoileus hemionus columbianus*) in relation to environment ..... *Frank L. Miller* 248

A laboratory colony of the Polynesian rat, *Rattus exulans* ..... *Harold J. Egoscue* 261

Ecological relationships of small mammals in a New Jersey barrier beach habitat ..... *Donald J. Shure* 267

Tactile encounters in a herd of captive giraffes ..... *A. I. Dagg* 279

Anatomy and function of expanded ribs in certain edentates and primates ..... *Farish A. Jenkins, Jr.* 288

Diurnal body weight loss and tolerance of weight loss in five species of *Myotis* ..... *Eugene H. Studier, John W. Procter,* and *D. J. Howell* 302

Home ranges and territorial behavior of the yellow-pine chipmunk, *Eutamias amoenus* ..... *Harold E. Broadbooks* 310

Effects of aggressive behavior on the adrenal cortex in male laboratory mice ..... *John Archer* 327

First records of the least weasel, *Mustela nivalis*, from Missouri and southwestern Iowa ..... *David A. Easterla* 333

A field experiment on intraspecific interactions in the red-backed vole, *Clethrionomys gapperi* ..... *C. H. S. Watts* 341

Effect of forced swimming on body temperatures and eosinophil levels in cotton rats (*Sigmodon hispidus*) ..... *John A. Sealander* and *Charles E. Guess* 348

The systematic status of the black howler monkey, *Alouatta pigra* Lawrence ..... *James Dale Smith* 358

General Notes

Morphological variation of *Peromyscus leucopus noveboracensis* on the Bass Islands of Lake Erie ..... *Michael W. Fall* 370

Effects of sodium chloride on water consumption, weight, and survival in the woodrats, *Neotoma micropus* and *Neotoma floridana* ..... *Elmer C. Birney* and *S. Lawrence Twomey* 372

Epididymal spermatozoa of two species of squirrels ..... *Jan Martan, Caroline S. Adams,* and *Billie L. Perkins* 376

Request for information on tagged whales in the North Atlantic ..... *Edward Mitchell* 378

First record of *Reithrodontomys megalotis* in Indiana ..... *John O. Whitaker, Jr.,* and *George R. Sly* 381

Anal tonsils of soricids ..... *G. L. Dryden* and *C. H. Conaway* 382

Distributional records of bats from Veracruz ..... *James Alden Lackey* 384

Ontogeny of vocalization in the least weasel ..... *Gary A. Heidt* and *Jane N. Huff* 385

Opossum predation: *Didelphis* on *Philander* ..... *Don E. Wilson* 386

Altruism by coatis in the face of predation by *Boa constrictor* ..... *Daniel H. Janzen* 387

Brain weight and acetylcholinesterase activity in differentially-grouped cottontail rabbits ..... *Ted D. McKinney,* and *Roy L. Kirkpatrick* 389

Twin vampire bats born in captivity ..... *Richard J. Burns* 391

A new remote capture method for free-ranging deer ..... *R. E. Hawkins, W. D. Klimstra, L. W. Lamely,* and *D. C. Autry* 392

Electrocardiograms of the opossum, *Didelphis marsupialis*, during feigned death ..... *Edward N. Francq* 395

Records of bats from Querétaro and San Luis Potosí, México ..... *Curtis A. Spenrath* and *Richard K. LaVal* 395

Immobilization of moose with M99 Etorphine ..... *Douglas B. Houston* 396

Population samples of the evening bat, *Nycticeius humeralis* ..... *Stephen R. Humphrey* and *James B. Cope* 399

Behavioral interactions in grouped male cottontails ..... *Ted D. McKinney* 402

Some characteristics of captive Michigan moose ..... *Louis J. Verme* 403

Latitude and breeding season in a polyestrus species of *Myotis* ..... *P. D. Dwyer* 405

Kogia simus and other cetaceans from San Luis Obispo County, California ..... *Aryan I. Roest* 410

Breeding and fecundity of six species of voles (*Microtus*) ..... *Margaret A. Colvin* and *Dallas V. Colvin* 417

A collection of mammals from Con Son Island, Vietnam ..... *P. F. D. Van Peenen, M. L. Cunningham,* and *J. F. Duncan* 419

Pharyngeal and lingual adaptations in the beaver ..... *Richard W. Coles* 424

Age and sex differences in the serum proteins of the chinchilla ..... *R. David Jones* and *D. E. Bunde* 425

Notes on mammals of southwestern Utah ..... *A. Dean Stock* 429

Obituaries 434

Reviews 436

Notes and Comments 444

71 755 AA A 30

NUMBER 3

Remarks on the distribution and natural history of pagophilic pinnipeds in the Bering and Chukchi seas ..... *John J. Burns* 445

Comparative gastric histology of five North and Central American bats ..... *C. Stanley Rouk* and *Bryan P. Glass* 455

Notes on the rodent faunas of two Panamanian forests ..... *Theodore H. Fleming* 473

Comparison from radiotracking of movements and denning habits of the raccoon, striped skunk, and opossum in northeastern Kansas ..... *Hampton W. Shirer* and *Henry S. Fitch* 491

Taxonomy of the *Neotoma albigula*-group of woodrats in central México ..... *E. Raymond Hall* and *Hugh H. Genoways* 504

Sequential live-trapping and snap-trapping studies of *Microtus* populations ..... *Kee-Chum Yang, Charles J. Krebs,* and *Barry L. Keller* 517

Comparative study of the calcanea of the Pinnipedia ..... *H. Randall Robinette* and *Howard J. Stains* 527

Infraspecific relationships of bats of the species *Myotis austroriparius* ..... *Richard K. LaVal* 542

Seasonal changes in reproductive and related organs in the pine vole, *Microtus pinetorum,* in southwestern Virginia ..... *G. L. Valentine* and *R. L. Kirkpatrick* 553

Biotelemetric studies of temperature regulation and torpor in the echidna, *Tachyglossus aculeatus* ..... *M. L. Augee, E. H. M. Ealey,* and *H. Spencer* 561

The ecology of Jamaican bats ..... *Robert E. Goodwin* 571

Climbing behavior of *Peromyscus floridanus* and *Peromyscus gossypinus* ..... *James N. Layne* 580

Ecological notes on the fossorial octodont rodent *Spalacopus cyanus* (Molina) ..... *Oswaldo A. Reig* 592

General Notes

The karyotype of *Euderma maculatum* and comments on the evolution of the plecotine bats ..... *Daniel F. Williams, Jay D. Druecker,* and *Hal L. Black* 602
Rattus masaretes: a synonym of *Rattus rattus moluccarius* ..... *Guy G. Musser* 606
A tagging method for small cetaceans ..... *Kenneth S. Norris* and *Karen W. Pryor* 609
Cervus elaphus in southern Tibet ..... *Graeme Caughley* 611
California sea lion as a regular winter visitant off the British Columbia coast ..... *David Hancock* 614
Water deprivation and activity in *Dipodomys ordii* and *Meriones unguiculatus* ..... *Robert Boice* and *Janet A. Witter* 615
Effect of temperature on water loss and CO_2 production of *Perognathus parvus* ..... *Stanley H. Anderson* 619
A recent record of *Myotis austroriparius* from Texas ..... *Edwin D. Michael, Richard L. Whisennand,* and *Guy Anderson* 620
Homing behavior of a red fox ..... *Robert L. Phillips* and *L. David Mech* 621
Nose scars in female sea otters ..... *Jeffrey O. Foott* 621
Some fecundity and longevity records for captive small mammals ..... *H. J. Egoscue, J. G. Bittmenn,* and *J. A. Petrovich* 622
Note on a bat (*Phylloderma stenops*) preying upon the brood of a social wasp ..... *Robert L. Jeanne* 624
Pilot whale tears ..... *Michael E. Q. Pilson* 625
Eastward dispersal of the badger, *Taxidea taxus,* into the northeastern United States ..... *Richard F. Nugent* and *Jerry R. Choate* 626
Load-lifting capacity of the vampire bat ..... *Raúl Flores Crespo, Richard J. Burns,* and *Samuel B. Linhart* 627
Record of the pygmy spotted skunk (*Spilogale pygmaea*) from Colima, Mexico ..... *John Keever Greer* and *Marjorie Greer* 629
Breeding of the silvered leaf monkey, *Presbytis cristata,* in Malaya ..... *Lord Medway* 630
Sedentariness of *Peromyscus maniculatus* in Alberta granaries ..... *Jacques Bovet* 632
Mass and individual strandings of false killer whales, *Pseudorca crassidens,* in Florida ..... *David K. Caldwell, Melba C. Caldwell,* and *Cecil M. Walker, Jr.* 634
Marine mammals from Puerto Rico to Antigua ..... *Donald S. Erdman* 636
Newly proposed genera, 1962–1966 ..... *L. R. Conisbee* 639

Reviews 641

Comments and News 648

NUMBER 4

Population dynamics of the western jumping mouse (*Zapus princeps*) during a four-year study ..... *Larry N. Brown* 651

Gonadal activity in the marsupial mouse, *Antechinus bellus*, with notes on other species of the genus (Marsupialia: Dasyuridae) ..... *J. Mary Taylor* and *B. Elizabeth Horner* 659

Variations in the hemoglobin concentrations of Great Basin rodents ..... *Anthony K. Lee* and *James H. Brown* 669

Functional histology of integumentary glandular regions in black-tailed deer (*Odocoileus hemionus columbianus*) ..... *W. B. Quay* and *Dietland Müller-Schwarze* 675

Geographic variation in the least chipmunk, *Eutamias minimus*, in New Mexico and eastern Arizona ..... *Walter H. Conley* 695

Notes on early postnatal development in certain southern African Muridae and Cricetidae ..... *J. Meester* and *A. F. Hallett* 703

The distributional status of some Costa Rican bats ..... *Alfred L. Gardner, Richard K. LaVal,* and *Don E. Wilson* 712

Distribution, relative abundance, food habits, and parasite patterns of giant rats (*Rattus*) in West Malaysia ..... *Boo-Liat Lim* 730

Geographic variation in *Pipistrellus hesperus* ..... *James S. Findley* and *Gerald L. Traut* 741

Observations on the behavior of the New Zealand fur seal (*Arctocephalus forsteri*) ..... *Ian Stirling* 766

Reproduction in captive pine voles, *Microtus pinetorum* ..... *R. L. Kirkpatrick* and *G. L. Valentine* 779

General Notes

Chromosomal variation in bats of the genus *Uroderma* (Phyllostomatidae) ..... *Robert J. Baker* and *Genaro Lopez* 786

Supplementary notes on Neotropical *Oryzomys dimidiatus* and *Oryzomys hammondi* (Cricetinae) ..... *Philip Hershkovitz* 789

Sexual dimorphism in the ischium and pubis of three species of South American monkeys ..... *Eugenie Scott Black* 794

Rodent fleas in a red fox den in Wisconsin ..... *Glenn E. Haas* 796

Growth rates of two African hares, *Lepus capensis* ..... *John E. C. Flux* and *Jennifer U. M. Jarvis* 798

Effects of ambient temperature and water vapor pressure on evaporative water loss in *Myotis lucifugus* ..... *John W. Procter* and *Eugene H. Studier* 799

Distributional notes on the thick-spined rat (*Hoplomys gymnurus*) with the first records from Honduras ..... *Ronald H. Pine* and *Dilford C. Carter* 804

Mandibular dental anomalies in white-tailed deer from Minnesota ..... *L. David Mech, L. D. Frenzel, Jr., Patrick D. Karns,* and *David W. Kuehn* 804

Ecological and morphological observations of *Felis planiceps* ..... *Illar Muul* and *Boo-Liat Lim* 806

Weights and measurements of moose, *Alces alces shirasi* ..... *J. Kenneth Doutt* 808

Stenella caeruleoalba in the northern Pacific Ocean ..... *W. Frederick Sampson* 809

The number of neurons in the cochlea of some bats ..... *Wilhelm Firbas* 809

Fossil walrus from Virginia waters ..... *Richard H. Manville* and *Jerald J. Wilson* 810

Comparative bone development in *Peromyscus leucopus noveboracensis* and *Peromyscus maniculatus bairdii* ..... *Gordon L. Kirkland, Jr.* 811

Spring occurrence of a silver-haired bat in upper Michigan ..... *Robert C. Stones* and *Garth W. Holyoak* 811

Precocious antler development and sexual maturity in a captive elk ..... *Richard J. Moran* 812

Comments on *Myosciurus pumilio* ..... *Clyde Jones* and *Henry W. Setzer* 813

The route of ingested blood in the vampire bat (*Desmodus rotundus*) ..... *G. Clay Mitchell* and *James R. Tigner* 814

The adaptive value of the social organization of the coati (*Nasua narica*) ..... *N. Smythe* 818

Underwater calls of a captive Amazon manatee, *Trichechus inunguis* ..... *W. E. Evans* and *Earl S. Herald* 820

Body weight of *Myotis lucifugus* under natural and laboratory conditions ..... *David Stewart Bruce* and *Jacob E. Wiebers* 823

Cytological distinction between *Microtus montanus* and *Microtus canicaudus* ..... *T. C. Hsu* and *Murray L. Johnson* 824

Recent records of black bears (*Ursus americanus*) on the barren grounds of Canada ..... *Charles J. Jonkel* and *Frank L. Miller* 826

The tracking board: a relative census technique for studying rodents ..... *R. D. Lord, A. M. Vilches, J. I. Maiztegui,* and *C. A. Soldini* 828

Observation on waking periods and movements of *Myotis sodalis* during hibernation ..... *James W. Hardin* and *Marion D. Hassell* 829

A potential bias in the use of Longworth traps ..... *P. R. Grant* 831

A recent record of the swift fox (*Vulpes velox*) in North Dakota ..... *William K. Pfeifer* and *Edmund A. Hibbard* 835

Reviews 836

Comments and News 842

Annual Meeting 848

Index 858

651

659

669

675

695

703

712

730

741

766

779

786

789

794
796
798

799

804

804
806
808
809
809
810

811

811
812
813

814
818

820

823

824

826

828

829
831

835

836

842

848

858